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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/608,546	06/30/2003	Hideaki Wakabayashi	030758	7260
23850	7590	04/30/2004	EXAMINER	
ARMSTRONG, KRATZ, QUINTOS, HANSON & BROOKS, LLP 1725 K STREET, NW SUITE 1000 WASHINGTON, DC 20006			ASINOVSKY, OLGA	
			ART UNIT	PAPER NUMBER
			1711	

DATE MAILED: 04/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/608,546		WAKABAYASHI ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Olga Asinovsky		1711	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>06/30/2003</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-4 are rejected under 35 U.S.C. 102(e) as being anticipated by Parr et al U.S. Patent 6,703,134.

The claimed invention is a grafted polypropylene having racemic diad fraction [r] of 0.51 to 0.88 and having weight-average molecular weight (Mw) of 5,000 to 400,000 wherein a grafted monomer specified by the formula (1) or (2), and a process in the present claims 3-4 for producing a said modified PP having the same value of racemic diad fraction of claim 1 and a grafted monomer represented by the formula (3) or (4), wherein the polymerization of the PP is carried out in the presence of a homogeneous metallic complex catalyst.

Parr discloses syndiotactic polypropylene produced in the presence of a metallocene catalyst, column 3, lines 54, 60-67. The syndiotactic polypropylene may have 75-85% of racemic pentads fraction, column 4, lines 5-12. The grafted monomer is maleic

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anhydride. The racemic diad fraction of the syndiotactic polypropylene, the grafted monomer and a metallocene catalyst=metallic complex catalyst are readable in applicants' claims. In view of the similarity between the reference process and the present invention in the present claims 3-4, the weight-average molecular weight of the polypropylene in Parr invention is inherent of being within the wide range of 5,000 to 400,000.

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parr et al U.S. Patent 6,703,134 or EP 0 457 291 (cited by applicants).

The difference between the present claims and Parr is the requirement in the present claims of a weight-average molecular weight of polypropylene. Parr does not disclose the weight average Mw of PP. It would have been obvious to one of ordinary skill in the art to consider that a weight average molecular weight of polypropylene in the range of 5,000 to 400,000 in Parr' invention can be produced because reference discloses the same catalyst of making a polypropylene, thus the other process conditions such as a temperature, time and pressure can be controlled for obtaining the desired molecular

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weight of polypropylene. In view of the similarity between the value of racemic fraction of the syndiotactic polypropylene grafted with a polymerizable monomer and the analogous metallocene catalyst which is readable in the present claims, the prima facie case of obviousness is to control the process conditions for producing a polypropylene, and, thereby, obtain the weight-average molecular weight in the range of 5,000 to 400,000.

EP 0 457 291 discloses syndiotactic polypropylene grafted with an unsaturated carboxylic acid or an unsaturated silane, page 3, lines 5-11. The highly syndiotactic polypropylene can have a pentad fraction of the polypropylene of 0.7 or 0.935, or 0.83 (according to the analysis that is the same to the present invention), page 3, lines 51-52, page 7, lines 45-46 and page 8, line 22. The pentad fraction disclosed above is readable in the value of racemic diad fraction [r] of 0.51 to 0.88 for a polypropylene disclosed in the present claims. EP'291 discloses the catalyst system that is a combination of a transition metal compound and co-catalyst of the aluminoxane, page 3, line 53 through page 4, line 41. The catalyst system in EP'291 is readable in applicants' claims 3-4.

The difference between the present claims and EP'291 is that reference does not disclose a weight-average molecular weight (Mw) of the obtained polypropylene. It would have been obvious to one of ordinary skill in the art to consider that the polypropylene in EP'291 can have the Mw followed within the broad range of 5,000 to 400,000 specified in the present claims, because EP'291 discloses the same catalyst system to produce the syndiotactic polypropylene. The motivation is that it would have

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been obvious to one of ordinary skill in the art that the polypropylene in EP'291 will have the MW within the range of 5,000 to 400,000 specified in the present claims since EP'291 discloses the same catalyst system for producing a highly syndiotactic polypropylene having pentad fraction followed within the range specified in the present claims.

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art is relevant to show the state of the art knowledge.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Olga Asinovsky whose telephone number is 571-272-1066. The examiner can normally be reached on 9:00 to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 571-272-1078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*O.A.*

O.A.  
April 26, 2004

Olga Asinovsky  
Examiner  
Art Unit 1711

*James J. Seidleck*  
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